This listing of claims will replace all prior versions and listings of claims in this application.

Listing of Claims

Claims 1-41 (canceled)

Claim 42 (currently amended): A method of reconstituting an animal embryo, ~~the process~~ comprising

(i) transferring a donor nucleus from a somatic cell into a first recipient oocyte; ~~followed by~~

(ii) removing the nucleus from the first recipient oocyte; ~~and~~

(iii) either activating a second recipient oocyte or enucleating a fertilized zygote; and

(iv) transferring ~~said~~ the nucleus from ~~said~~ the first recipient oocyte ~~to a further~~ into the preactivated second recipient oocyte or ~~an~~ the enucleated fertilized zygote.

Claim 43 (currently amended): The method as claimed in claim 42, wherein the first oocyte is a mature metaphase II oocyte ~~(unfertilized egg)~~ or an activated ~~MII~~ metaphase II oocyte.

Claim 44 (currently amended): The method as claimed in claim 42, wherein the second ~~further~~ oocyte is an enucleated ~~MII~~ metaphase II oocyte.

Claim 45 (previously presented): The method as claimed in claim 42, in which a reconstructed embryo obtained thereby is cultured *in vitro* or *in vivo* to a stage suitable for transfer to a final surrogate recipient for development to term.

Claim 46 (previously presented): The method as claimed in claim 42, in which a reconstructed embryo obtained thereby is transferred to a final surrogate recipient to support embryo development and development to term.

Claim 47 (previously presented): The method as claimed in claim 42, in which the donor nucleus is genetically modified.

Claim 48 (previously presented): The method as claimed in claim 42, wherein the donor nucleus is donated by a diploid cell.

Claim 49 (previously presented): The method as claimed in claim 48, wherein the donor nucleus is from a G1 cell.

Claim 50 (previously presented): The method as claimed in claim 48, wherein the diploid cell is arrested at the G1/S-phase border.

Claims 51-55 (canceled)

Claim 56 (currently amended): The method as claimed in claim 42, wherein the donor nucleus is donated by a cell arrested by any point in the cell cycle.~~, *i.e.*, G0, G1, G1/S, S, G2 or M.~~

Claim 57 (previously presented): The method as claimed in claim 42, wherein the first recipient oocyte is enucleated.

Claim 58 (currently amended): The method as claimed in claim 42, wherein the ~~first~~ donor nucleus is transferred into the first recipient oocyte by cell fusion, or by cell or nuclear injection.

Claim 59 (withdrawn): The method as claimed in claim 42, in which the animal embryo is an ungulate species embryo.

Claim 60 (previously presented): The method as claimed in claim 59, wherein the animal embryo is a cow or bull, pig, sheep, goat, camel, or water buffalo embryo.

Claim 61 (withdrawn): The method as claimed in claim 42, wherein the animal embryo is a mouse, rat, or other rodent embryo.

Claim 62 (withdrawn): The method as claimed in claim 42, wherein the animal embryo is a lagomorph embryo.

Claim 63 (withdrawn): The method as claimed in claim 62, wherein the animal embryo is a rabbit embryo.

Claims 64-65 (canceled)

Claim 66 (previously presented): The method as claimed in claim 42, wherein the nucleus is transferred from the first recipient oocyte to a fertilized zygote.

Claim 67 (currently amended): The method as claimed in claim 42, wherein the second ~~further~~ recipient oocyte is ~~an~~ activated ~~oocyte~~ by chemical or physical means.

Claim 68 (currently amended): The method as claimed in claim 42, wherein the second ~~further~~ recipient oocyte is enucleated.

Claim 69 (previously presented): A method of preparing an animal, the method comprising:

(a) reconstituting an animal embryo as claimed in claim 42, thereby obtaining a reconstituted embryo,

(b) causing a foetus to develop from the embryo, thereby obtaining an animal foetus; and

(c) causing an animal to develop to term from the animal foetus, thereby obtaining an animal.

Claim 70 (previously presented): The method as claimed in claim 69, further comprising:

(d) breeding the animal.

Claim 71 (previously presented): A method as claimed in claim 69, wherein the animal embryo is further manipulated prior to full development of the embryo.

Claim 72 (previously presented): A method as claimed in claim 69, wherein the animal foetus is further manipulated prior to full development of the embryo.

Claim 73 (previously presented): The method as claimed in claim 69, wherein a new cell line or cell population is derived from the reconstituted embryo.

Claim 74 (previously presented): The method as claimed in claim 69, wherein a new cell line or cell population is derived from the animal foetus.

Claim 75 (previously presented): The method as claimed in claim 69, wherein a new cell line or cell population is derived from the animal.

Claim 76 (previously presented): The method as claimed in claim 69, wherein more than one animal is derived from the reconstituted embryo.

Claim 77 (previously presented): A reconstituted animal embryo, which is capable of giving rise to a live birth and is prepared by the method as claimed in claim 42.

Claim 78 (previously presented): An animal obtained by the method as claimed in claim 69.

Claim 79 (previously presented): An animal obtained from a reconstituted animal embryo as claimed in claim 77.

Claim 80 (previously presented): An embryonic stem cell line or cell population obtained from an embryo produced by the method of claim 42.

Claim 81 (previously presented): An undifferentiated cell line or cell population obtained from an embryo produced by the method of claim 42.

Claim 82 (previously presented): A differentiated cell line or cell population obtained from an embryo produced by the method of claim 42.

Claim 83 (new): The method as claimed in claim 67, wherein the chemical or physical activation is by a treatment that induces calcium entry into the oocyte or release of internal calcium stores.

Claim 84 (new): The method as claimed in claim 67, wherein the chemical activation is by treatment with ethanol, ionomycin, inositol tris-phosphate or calcium ionophore A23187.

Claim 85 (new): The method as claimed in claim 67, wherein the chemical activation is by treatment with extracts of sperm.

Claim 86 (new): The method as claimed in claim 67, wherein the physical activation is by application of a DC electrical stimulus.

Claim 87 (new): The method as claimed in claims 83-86, wherein the chemical or physical activation further comprises treatment with inhibitors of protein synthesis or inhibitors of serine threonine protein kinases.

Claim 88 (new): The method as claimed in claim 42, wherein the animal embryo is a pig embryo.